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12/17/2001

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EXAMINER

PARSONS, THOMAS H

ART UNIT	PAPER NUMBER
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1741

DATE MAILED: 12/17/2001

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,260

Applicant(s)

PARISE, RONALD J.

Examiner

Thomas H Parsons

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9-14 and 18-23 is/are rejected.
- 7) ☐ Claim(s) 7,8 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: reference sign "45" as shown on Figures 6 and 7; and, reference sign "72" as shown on Figure 18. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

reference sign "60" as mentioned on page 24, line 21 and on page 31, line 2;

reference signs "70" and "70'", as mentioned on page 34, line 16;

reference sign "30'" as mentioned on page 43, line 1; and,

reference sign "2" as mentioned on page 43, line 5.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "60" has been used to designate both "window", as mentioned on page 24,

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line 21 and "radiative aperture", as mentioned on page 31, line 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

Page 1:

Line 7: after "July 22, 1999", suggest inserting "(now U.S. Patent No. 6,162,985)";

Line 8: after "September 19, 1997", suggest inserting "(now U.S. Patent No. 5,936,193)"; and,

Line 16: suggest replacing "Prior Art" with --Description of the Related Art--.
Appropriate correction is required.

Claim Objections

5. Claims 2 and 23 are objected to because of the following informalities:

Claim 2, line 2, suggest changing "internals" to --intervals--; and,

Claim 23, line 1, suggest inserting "of" after "device".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear as to what is disposed within the pressure cell, the device itself or the thermal energy transmitting material (see claim 15).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6, 9-14, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemley (4,338,560).

Claim 1: Lemley discloses a method for radiating thermal energy from a terrestrial position into deep space comprising arranging a thermal transmitting material (collectors) over a terrestrial object; and, positioning the thermal energy transmitting material so that a transmitting surface thereof (radiators) faces deep space, the material having spectral surface properties of high emissivity (radiation absorptive and radiation emissive material, such as metal). (abs.; Figure 2 showing collectors 10 and radiators 22, both of a radiation absorptive and radiation emissive material, and coated with a polyester film, and facing earth and deep space, respectively; col. 2: 14-68).

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Although Lemley does not specifically recite "...in a spectral band substantially transparent to the atmosphere of the earth.", it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the material of Lemley to provide the claimed properties as both metals are similar, if not the same, in structure and function, absent evidence to the contrary.

Claim 2: Although Lemley does not specifically recite that the terrestrial object is covered with the transmitting material only at intervals during which the object is not in direct sunlight; it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the object to covered with the transmitting material only at intervals during which the object is not in direct sunlight in light of Lemley's teaching on column 1, lines 5-11 that transmission occurs during day and/or night.

Claims 3 and 11: Although Lemley is silent with respect to the material having a normal spectral emissivity ranging from 0.8 to about 1.0, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the material of Lemley to provide the claimed property as both metals are similar, if not the same, in structure and function, absent evidence to the contrary.

Claims 4 and 12: Although Lemley is silent with regards to the material having a low absorptivity in all spectral bands, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the material of Lemley to provide the claimed property as both metals are similar, if not the same, in structure and function, absent evidence to the contrary.

Claims 5 and 13: Although Lemley is silent with regards to the material having an absorptivity ranging from about 0.3 to about 0.0, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the material of Lemley to provide the claimed property as both metals are similar, if not the same, in structure and function, absent evidence to the contrary.

Claims 6 and 14: Lemley disclose that the spectral band is selected from about 8μ to about 13μ (col. 2: 44-68).

Claims 9 and 18: Although Lemley is silent with regards to material comprising a coating that reflects incoming thermal infrared electromagnetic energy, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the material of Lemley to provide the claimed property as both metals are similar, if not the same, in structure and function, absent evidence to the contrary.

Claim 10: Lemley discloses a device for transmitting thermal energy from a terrestrial position into deep space comprising a thermal transmitting material (collectors) designed to cover a terrestrial object; and positioned with a transmitting surface thereof (radiators) facing deep space, the transmitting material having spectral surface properties of high emissivity (radiation absorptive and radiation emissive material, such as metal). (abs.; Figure 2 showing collectors 10 and radiators 22, both of a radiation absorptive and radiation emissive material, and coated with a polyester film, and facing earth and deep space, respectively; col. 2: 14-68).

Although Lemley does not specifically recite "...in a spectral band substantially transparent to the atmosphere of the earth.", it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the material of Lemley to provide

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the claimed properties as both metals are similar, if not the same, in structure and function, absent evidence to the contrary.

Claim 22: Lemley discloses that the thermal transmitting material is positioned in thermal contact with a heat transfer surface (Figure 2 showing thermal transmitting material 10, in thermal contact with thermoelectric elements 14 and 16; col. 2: 6-10; and 25-37).

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 19-21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6 and 7 of U.S. Patent No. 6,162,985.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 19 of the instant application is silent with regards to the first and second junction surfaces disposed within a pressure cell having a pressure less than the ambient pressure as set forth in claim 1 of the '985 Patent (i.e., the scope of the instant case is broader than that of the '985 Patent).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the thermoelectric device of '985 Patent to provide the claimed thermoelectric device as both are structurally similar, if not the same, absent evidence to the contrary.

Claim 20: claim 6 of the '985 Patent discloses that the electricity generating cell has a thermal resistivity; the first semiconductor material is disposed in a distance between the first junction surface and the third junction surface; and the first semiconductor material has a geometry which increases the thermal resistivity as compared to a second electricity generating cell having a straight geometry which spans a substantially equivalent distance.

Claim 21: Claim 7 of the '985 Patent discloses that the geometry is curved, coiled, snaking, or a combination thereof.

Allowable Subject Matter

12. Claims 7, 8 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claim 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Reasons for Indicating Allowable Subject Matter

14. The following is a statement of reasons for the indication of allowable subject matter:

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A search of the prior art of record failed to reveal or explicitly teach, alone or in combination, what is instantly claimed: in particular,

thermal energy transmitting material comprising a suspension of a spectral substance in a polymeric base; for this reason, dependent claim 7 and claim 8, which is dependent thereon, claim 16 and claim 17, which is dependent thereon, are patentably distinct from the prior art of record; and,

thermal energy transmitting material disposed within a pressure cell having a pressure less than ambient pressure; for this reason, dependent claims 15 and 23 are patentably distinct from the prior art of record.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H Parsons whose telephone number is (703) 306-9072.

The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathryn Gorgos can be reached on (703) 308-3328. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Thomas H Parsons
Examiner
Art Unit 1741

December 3, 2001